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Customer No.: 20991

23. (Previously Presented) A method according to claim 22, further comprising multiplexing the individual data sequences into a bit stream.

REMARKS

By this amendment, claims 1-23 are pending, in which claims 1, 17 and 22 are currently amended. The amendment incorporates a feature found in independent claim 19, as to reduce issues for Appeal. These changes are not believed to raise new issues requiring further consideration and/or search, and it is therefore respectfully requested that the present amendment be entered under 37 C.F.R. §1.116. Further, no new matter is introduced.

The Office Action mailed April 15, 2005 rejected claims 1-2, 11-14, and 16-23 under 35 U.S.C. § 102 as anticipated by *Wu et al.* (US 6,731,684), claims 3-5 and 16 as obvious under 35 U.S.C. § 103 based on *Wu et al.* in view of *Carnahan et al.* (US 5,414,780), claims 6, 7 and 16 as obvious under 35 U.S.C. § 103 based on *Wu et al.* in view of *Kato et al.* (US 5,719,986), claims 8 and 16 as obvious under 35 U.S.C. § 103 based on *Wu et al.* in view of *Weinberger et al.* (US 5,680,129), and claims 9 and 10 as obvious under 35 U.S.C. § 103 based on *Wu et al.* in view of *Moroney et al.* (US 5,771,239).

As an initial matter, in the obviousness rejection of claims 3-5 and 16, the Office Action (on pages 4 and 5) applies the combination of *Wu et al.* and *Carnahan et al.*, but yet refers to the previously applied reference of *Gordon*. Similarly for the rejection of claims 6, 7 and 16, the Office Action (pages 5 and 6) mentions the "teachings of Gordon" but only applies *Wu et al.* in view of *Kato et al.* Again, for the rejection of claims 8 and 16, in which the combination of *Wu et al.* in view of *Weinberger et al.* was applied, the Office Action refers to the "encoder of Gordon." For the purposes of this Response, Applicants assume the Office Action does not intend to apply *Gordon*, but instead only those references mentioned in the respective headings. The Examiner is reminded that MPEP § 706 states that "[t]he goal of examination is to clearly articulate any rejection early in the prosecution process so that applicant has the opportunity to provide evidence of patentability and otherwise respond completely at the earliest opportunity." Furthermore, MPEP § 706.02(j) indicates that: "[i]t is important for an examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to respond."

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To reduce issues for Appeal, Applicants have amended independent claims 1, 17 and 22. These claims incorporate a feature from unamended claim 19 with respect to grouping of the video frames. Specifically, amended claim 1 and 17 recite grouping "video frames that are **only** between consecutive I-frames into a video data set." Claim 22, as amended, recites "grouping video frames of the video signal that are **only** between consecutive I-frames into a video data set."

Unamended claim 19 recites "grouping video frames that are only between two consecutive I-frames into a video data set."

The above features are not taught by *Wu et al.*, alone or in combination with *Camahan et al., Kato et al., Weinberger et al.,* or *Moroney et al.*

Wu et al. discloses a High-Definition Television (HDTV) encoder that includes an HDTV panel splitter 110 for splitting an input HDTV picture into a eight panels (FIG. 1; col. 3:48-51, 65-66). Each panel is compressed by a corresponding video compressor 120-127. *Wu et al.* describes the video encoder processing pipeline (FIG. 2; col. 4: 20-42), which associated with these video compressor 120-127, as follows (Emphasis Added):

> To facilitate the subsequent stages of reordering and motion estimation, **the preprocessing stage 205 determines whether or not a preprocessed frame is a B-frame. If a frame is not classified as a B frame, the encoder (encoding stage 225) determines whether it is an I- or P-frame at the final stage of the pipeline, just before the picture is actually encoded. A new GOP is started by an I-frame.**
>
> The scene change detection function 210 detects scene changes between consecutive frames at the preprocessing stage of the pipeline. The main objective of scene change processing is to change the location of the scheduled start of a new GOP to align with the start of the new scene if a scene change is detected at the proximity of the originally scheduled I-frame. Once a scene change is detected at the scene change detection function 210, a control signal (ScDet flag) is sent to the encoding stage 225 to prevent it from generating I-frames for frames that are currently in the encoder's processing pipeline waiting to be encoded. When the corresponding scene change frame subsequently arrives at the encoding stage 225, it is encoded as an I-frame, assuming there are no other scene change frames in the pipeline, in which case the last scene change frame in the pipeline is encoded as an I-frame.

The Office Action, on page 3, equates the preprocessing stage 205 as the claimed "means for grouping." However, from the above passage, it is not possible that the preprocessing stage 205 performs "grouping video frames that are **only** between consecutive I-frames into a video data set," as the preprocessing stage 205 serves to identify whether an unknown frame (which could be a B-, I-, or P- frame)

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is in fact a B frame. *Wu et al.* mentions in general that "A new GOP is started by an I-frame." This is not

disputed; however, there is no factual support for any type of grouping being performed other than

identification of the B frame at the preprocessing stage 205. The Office Action refers to col. 8: 5-21 and col.

10: 1-4; in pertinent part, *Wu et al.* describes the following (Emphasis Added):

> At block 665, if the preType is a B-frame, there is no change (block 670). If the preType is a P-frame, it is changed to an I-frame (block 675) when start_new_gop is true (block 680). If the preType is a P-frame, it is not changed (block 685) when start_new_gop is false (block 680). **Note that I- and P-frames are treated the same throughout the pipeline until the encoding stage.** It is not necessary to determine whether a frame is an I- or P-frame until the encoding stage.

It is clear from the above passage that *Wu et al.* does not contemplate performing grouping of "video

frames that are **only** between consecutive I-frames into a video data set," in that the frames (including I- and

P-frames) are processed in the same manner that at the preprocessing stage 205. Therefore, the

preprocessing stage 205 does not perform any grouping function, much less the claimed grouping feature.

Additionally, the claimed features include "splitting the video data set into a plurality of homogeneous

files," which the Office Action equates to the P/B Frame Reordering Delay 215 and the Motion Estimation

Stage 220, as well as "116" of FIG. 1. It is noted that there is no label of "116" in FIG. 1. Thus, Applicants

assume the Office Action is referring to the HDTV Panel Splitter 110. With respect to the Splitter 110, the

only relevance this has to the claimed feature is use the term "split," as the context is entirely different. Even

a cursory study of operation of the encoder 100 reveals that the input to the HDTV Panel Splitter 110 is an

input HDTV video signal, which is not the claimed "video data set." The "video data set" in the context of the

totality of the claim is formed by "grouping video frames that are **only** between consecutive I-frames." The

input to the encoder 100 cannot be the claimed video data set.

As regard the combination of components 215 and 220, *Wu et al.* (as explained above) discloses

"Note that I- and P-frames are treated the same throughout the pipeline until the encoding stage." Base on

this description, it cannot be that the P/B Frame Reordering Delay 215 and the Motion Estimation Stage 220

can split the claimed video data set (even assuming, *arguendo*, that the preprocessing stage 205 can

properly group "video frames that are **only** between consecutive I-frames" into the video data set). Moreover,

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Applicants fails to understand the technical leap made by the Office Action, as *Wu et al.* merely describes the

operation of these two components 215 and 220 as follows (col. 4: 12-17):

> Subsequent stages of the pipeline 200 include a **P/B frame reordering delay function 215**
> **that delays and reorders the video frames.** This is done since P-frames are sometimes
> encoded out of display order for use in predicting the B-frames. **A motion estimation stage**
> **220 carries out motion estimation.**

Furthermore, it is noted that the video encoder pipeline 200 is associated with each of the video

compressors 120-127 (FIG. 1), which process video streams that have already been split by the HDTV Panel

Splitter 110. Now, the Office Action is arguing that another splitting function is performed – there is no factual

basis for this interpretation.

In view of the foregoing, Applicants respectfully submit that *Wu et al.* fails to teach each and every

element of the claim as required for anticipation under 35 U.S.C. § 102.

Regarding the obviousness rejections, the additions of *Carnahan et al., Kato et al., Weinberger et al.,*

and *Moroney et al.* do not fill in the gaps of *Wu et al. Carnahan et al.* is applied for a supposed teaching of

motion components. *Kato et al.* is relied upon for a supposed disclosure of storing mode 3 B-frame

components. *Weinberger et al.* is applied for a supposed teaching of mapping negative values. The Office

Action relies on *Moroney et al.* for a supposed teaching of use of YK algorithm.

Accordingly, amended independent claims 1, 17, 19 and 22 should be indicated as allowable, along

with claims 2-16, 18, 20 and 23 depending correspondingly therefrom.

With respect to independent claim 21, this claim recites "splitting the video data set **consisting of**

non-intra video frames into a plurality of data sequences." Claim 21 is allowable at least for the reasons

proffered for the allowability of independent claims 1, 17, 19 and 22.

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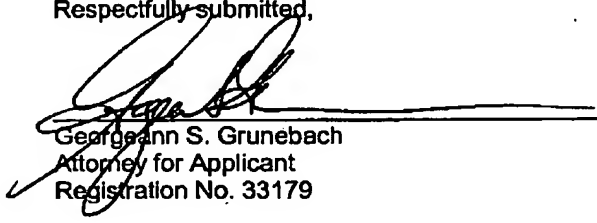
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Therefore, the present application, as amended, overcomes the rejections of record and is in

condition for allowance. Favorable consideration of this application is respectfully requested. If any

unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney

at (310) 964-4615 so that such issues may be resolved as expeditiously as possible. All correspondence

should continue to be directed to our below-listed address.

Respectfully submitted,

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